

REMARKS

I. EXAMINER INTERVIEW

Applicants appreciate the Examiner discussing with Applicants' attorney the rejections in the May 5, 2008 Office Action. Essentially, Applicants' attorney pointed out to the Examiner that the *Lof* reference does not teach or suggest imprint lithography, and therefore *Lof* does not support the Examiner's 102 and 103 rejections in the Office Action. In a July 28, 2008 voice message from the Examiner to Applicants' attorney, the Examiner stated that he agreed that *Lof* does not disclose imprint lithography.

II. REJECTION UNDER 35 U.S.C. §102

Claims 1 and 11 stand rejected under 35 U.S.C. §102(e) as being anticipated by *Lof et al.* (2003/0224262). In response, Applicants respectfully traverse this rejection.

As noted in Section I, the Examiner has agreed that *Lof* does not teach imprint lithography. As a result, *Lof* does not teach an alignment mark in imprint lithography. Correspondingly, *Lof* does not teach or suggest the limitations in the rejected claims. Therefore, *Lof* does not anticipate claims 1 and 11.

Claim 11 recites that the bulk material is transparent to radiation having a predetermined wavelength. The Examiner has not in any way addressed this claim limitation. For this reason alone, claim 11 is patentable over the cited prior art, since the Examiner has failed to prove a *prima facie* case of anticipation in rejecting claim 11. Claim 11 also recites limitations recited in claim 2. Therefore, it is inconsistent to reject claim 11 under 102 and claim 2 under 103 using the *Lof* reference.

III. REJECTIONS UNDER 35 U.S.C. §103

1. Claims 2-7, 12-15, and 19-20 stand rejected under 35 U.S.C. §102(b) as being anticipated [sic] by *Lof* in view of *Mancini* (U.S. Patent No. 6,387,787). Applicants assume that the Examiner intended to state that this was a 35 U.S.C. §103 rejection of these claims as being unpatentable over *Lof* in view of *Mancini*. Applicants respectfully traverse these rejections.

As noted in Section I, *Lof* does not teach an alignment mark embedded in an embedding material included in bulk material of the imprint template used for imprint lithography. As a result, *Lof* does not support the rejections of these claims as asserted by the Examiner. Since the Examiner has specifically relied upon an assumption that *Lof* teaches an alignment mark in imprint lithography, and this assumption has been admitted by the Examiner to be in error, the Examiner's *prima facie* case of obviousness in rejecting these claims fails.

The Examiner asserts that *Mancini* teaches the alignment marks as surface 22. Surface 22 is not an alignment mark or layer; it is just a surface of layer 20. Alignment marks are described in [0011], with their use described in [0012]. The Examiner cannot ignore the meaning of alignment marks when attempting to find a reference that teaches all of the limitations of claim 1. *Mancini* does not teach or suggest that layer 20 or surface 22 in any way performs an alignment function as do the alignment marks recited within the present invention. An examiner may broadly interpret claim limitations, but such interpretation must be reasonable and consistent with the teachings of the specification. A claim term is generally given the ordinary and customary meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention. *See, Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005) (*en banc*). In construing a claim term, the "person of ordinary skill in the art is deemed to read the claim term ... in the context of the entire patent, including the specification." *Id.* Thus, the specification is "the primary basis for construing the claims." *Id. at 1315*. During prosecution, the Office gives claims their broadest reasonable construction "in light of the specification as it would be interpreted by one of ordinary skill in the art." *Id. At 1316*. The interpretation used by the Office, however, must be reasonable: "Claims are not to be read in a vacuum and while it is true they are to be given the broadest, reasonable interpretation during prosecution, their terms still have to be given the meaning called for by the specification of which they form a part." *In re Royka*, 490 F.2d 981, 984 (CCPA 1974). *See also MPEP §2111*. Since the Examiner's *prima facie* case of obviousness depends upon the Examiner's assertions of what *Mancini* teaches and discloses, and since Applicants have rebutted such assertions by the Examiner, the Examiner's *prima facie* case of obviousness fails. An applicant may specifically challenge an obviousness rejection by showing that the Examiner reached an incorrect conclusion of obviousness or that the Examiner based the obviousness determination on incorrect factual predicates. *In re Rouffet*, 47 USPQ 2d 1453, 1455 (Fed. Cir. 1998).

The present invention as recited in the claims recites alignment marks for use in imprint lithography within an imprint template, wherein the alignment marks are embedded. *Lof* may teach alignment marks, but *Lof* has nothing to do with imprint lithography. *Mancini* is an invention directed at imprint lithography, but there is no teaching or even a mirror suggestion within *Mancini* of the use of alignment marks, contrary to the Examiner's assertions. The Examiner has recognized this, and has relied upon the Examiner's unreasonably broad interpretation of the teachings of *Mancini* in an attempt to find a disclosure of alignment marks in *Mancini* so that the Examiner can assert that one skilled in the art at the time the invention was made would have combined the two references in order to arrive at the claimed invention. Applicants have more than adequately rebutted the assertion by the Examiner that *Mancini* teaches alignment marks. As a result, one skilled in the art at the time the invention was made would not have looked at *Mancini* and *Lof* and combined them in order to arrive at the claimed invention, because there is no suggestion to combine the two references to arrive at an invention of alignment marks embedded within an imprint template.

Claim 2 recites that the alignment marks are spaced one or more predetermined distances from a surface of the imprint template. The Examiner has not specifically addressed such claim limitations and has therefore failed to prove a *prima facie* case of obviousness in rejecting claim 2. Even if *Lof* teaches alignment marks embedded in a material, *Lof* has nothing to do with an imprint template, and therefore the combination of the references does not teach or suggest the limitations of claim 2.

Claim 3 recites that the one or more predetermined distances is sufficient to enable predetermined radiation to irradiate predetermined regions disposed under a surface of the imprint template. There is no discussion in either of the references of irradiation under a surface of an imprint template. Contrary to the Examiner's assertion, space 25 recited in *Mancini* does not meet such claims limitations, nor does *Mancini* (or the combination of the references) recite an imprint template nor a need to irradiate regions under the surface of such an imprint template. As a result, the Examiner has failed to prove a *prima facie* case of obviousness in rejecting claim 3.

Claim 4 recites that the alignment marks are fabricated from a material whose index of refraction is different from that of at least the embedding material. The Examiner is relying upon teachings in Mancini for supporting the obviousness rejection. Since *Mancini* does not teach or suggest alignment marks, the Examiner has not adequately shown how the combination of references discloses the limitation of claim 4 or makes them obvious. Id.

Claim 5 recites that the alignment marks are fabricated from a material whose index of refraction is different from that of at least the embedding material and that of a material into which an imprint is made. The Examiner has not specifically addressed these claim limitations. For this reason alone, the Examiner has failed to prove a *prima facie* case of obviousness in rejecting claim 5. Furthermore, for reasons similarly given above with respect to claim 4, since *Mancini* does not teach or suggest alignment marks, the Examiner has not adequately shown how the combination of references discloses these claim limitations. Further, there is no teaching or suggestion within *Mancini* or *Lof*, or their combination, that the index of refraction of the material from which the alignment marks are fabricated is different from a material into which an imprint is made.

With respect to claim 6, the Examiner has asserted that surface 22 may include a metal. However, since surface 22 is not an alignment mark, the Examiner has failed to prove a *prima facie* case of obviousness, since *Mancini* does not meet the teachings that the Examiner needs in order for the obviousness rejection to be valid. Id.

Claim 7 recites that a material disposed between the alignment makes and a surface of the imprint template is the same material as the embedding material and is the same material used to form other portions of the bulk material of the imprint template. Since the Examiner has not in any way specifically addressed these claim limitations, the Examiner has failed to prove a *prima facie* case of obviousness in rejecting claim 7.

Claims 12-15 depend upon claim 11, which is patentable as noted above in Section II.

Claim 12 is patentable for similar reasons as given above with respect to claim 3.

Claim 13 is patentable for similar reasons as given above with respect to claim 4.

Claim 14 is patentable for similar reasons as given above with respect to claim 5.

Claim 15 is patentable for similar reasons as given above with respect to claim 6.

Further with respect to claims 19 and 20, since the Examiner has not specifically addressed these claims, the *prima facie* case of anticipation fails.

2. Claim 8 stands rejected under 35 U.S.C. §103 as being unpatentable over *Lof* as applied to claim 1 and further in view of *Calveley* (U.S. Patent No. 6,165,911). In response, Applicants respectfully traverse this rejection.

Applicants respectfully assert that because *Lof* fails to teach “alignment marks embedded in an embedding material included in bulk material of the imprint template, wherein said embedding material surrounds said alignment marks” as recited in independent claim 1, from which claim 8 respectively depends, dependent claim 8 is not rendered obvious by *Lof* in view of *Calveley*.

3. Claim 16 stands rejected under 36 U.S.C. 103 as being unpatentable over *Lof* in view of *Mancini* as applied to Claims 1-7 and 12-15 above, and further in view of *Calveley*. In response, Applicants respectfully traverse this rejection.

Applicants respectfully assert that because *Lof* fails to teach “alignment marks embedded in an embedding material included in bulk material of the imprint template, wherein said embedding material surrounds said alignment marks” as recited in independent claim 11, from which claim 16 respectively depends, dependent claim 16 is not rendered obvious by *Lof* in view of *Mancini* and *Calveley*.

4. Claims 9 and 10 stand rejected under 35 U.S.C. 103(a) as being unpatentable over *Lof* and *Calveley* as applied to claim 8 above and further in view of *Jeans* (2004/0219246). Applicants respectfully traverse.

Applicants respectfully assert that because claim 8, which depends from independent claim 1, is patentable for the reasons described above, claims 9 and 10 are patentable over *Lof* and *Calveley* and further in view of *Jeans*.

5. Claims 17 and 18 stand rejected under 35 U.S.C. 103(a) as being unpatentable over *Lof* in view of *Mancini* and *Calveley* as applied to claim 16 above and further in view of *Jeans* (2004/0219246). Applicants respectfully traverse.

The Examiner asserted that *Mancini* fails to teach fluorcarbons.

Further, the Examiner asserted that *Jeans* teaches the use of fluorcarbons as a release layer.

Applicants respectfully assert that because claim 16, which depends from claim 11, is patentable for the reasons described above, the Examiner's assertion is moot. Thus, Applicants respectfully assert that claims 17, and 18 are patentable over *Lof* in view of *Mancini* and *Calveley* and further in view of *Jeans*.

6. Claims 19 and 20 stand rejected under 35 U.S.C. §103 as being unpatentable over *Lof* in view of *Kobayashi* (U.S. Patent No. 6,509,271). In response, Applicants respectfully traverse this rejection.

As noted above, *Lof* does not teach an alignment mark embedded in an embedding material included in bulk material of the imprint template use for imprint lithography. As a result, *Lof* does not support the Examiner's rejections of these claims as asserted by the Examiner. Since the Examiner has specifically relied upon an assumption that *Lof* teaches an alignment mark in imprint lithography, and this assumption has been admitted by the Examiner to be in error, the Examiner's *prima facie* case of obviousness in rejecting these claims fails.

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CONCLUSION

As a result of the foregoing, it is asserted by Applicant that the Claims in the Application are now in condition for allowance, and respectfully requests allowance of such Claims.

Please apply all charges or credits to Deposit Account No. 06-1050, referencing Attorney Docket No. 21554-0004001.

Respectfully submitted,

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Kelly K. Kordzik
Reg. No. 36,571

Fish & Richardson P.C.
One Congress Plaza
Suite 810
111 Congress Avenue
Austin, TX 78701
Telephone: (512) 472-5070
Facsimile: (512) 320-8935

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